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INT CL<sup>5</sup> A01K, B65D

(54) Foldable crates

(57) A foldable crate e.g. for transporting a dog comprises bottom, top, side and end walls, one end wall including a slidable door 21 supported by a door frame 2. The end walls are foldable onto a bottom grid 1, the remaining walls being collapsible onto the end walls.

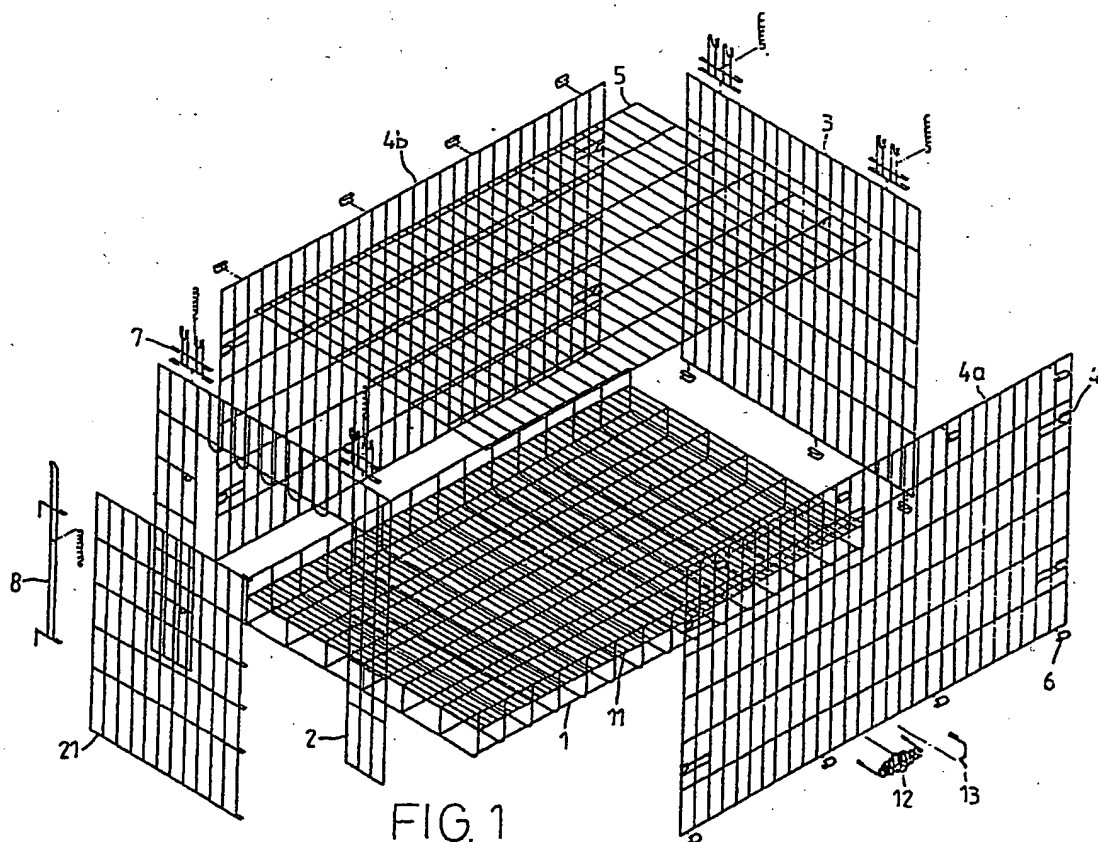


FIG. 1

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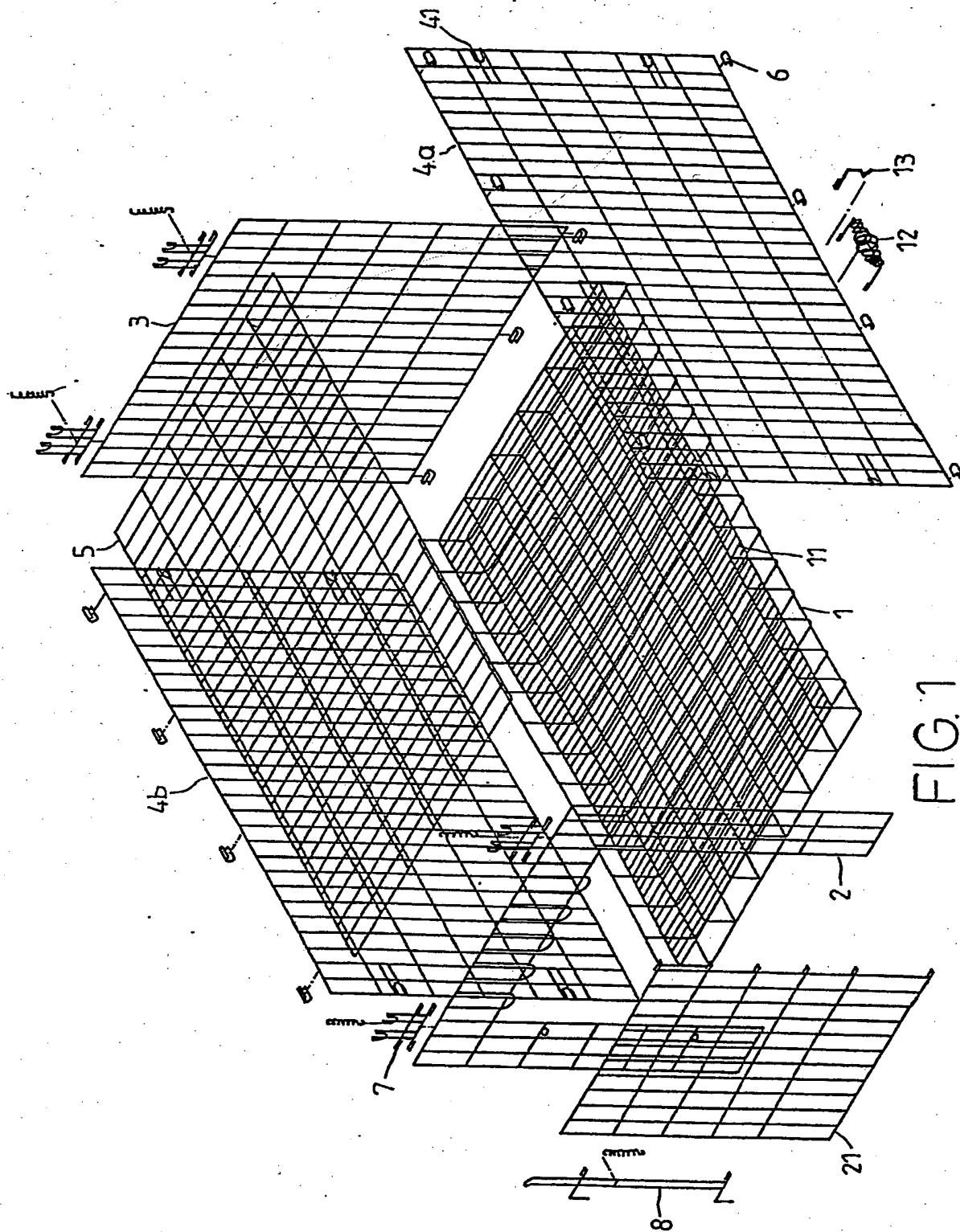


FIG. 1

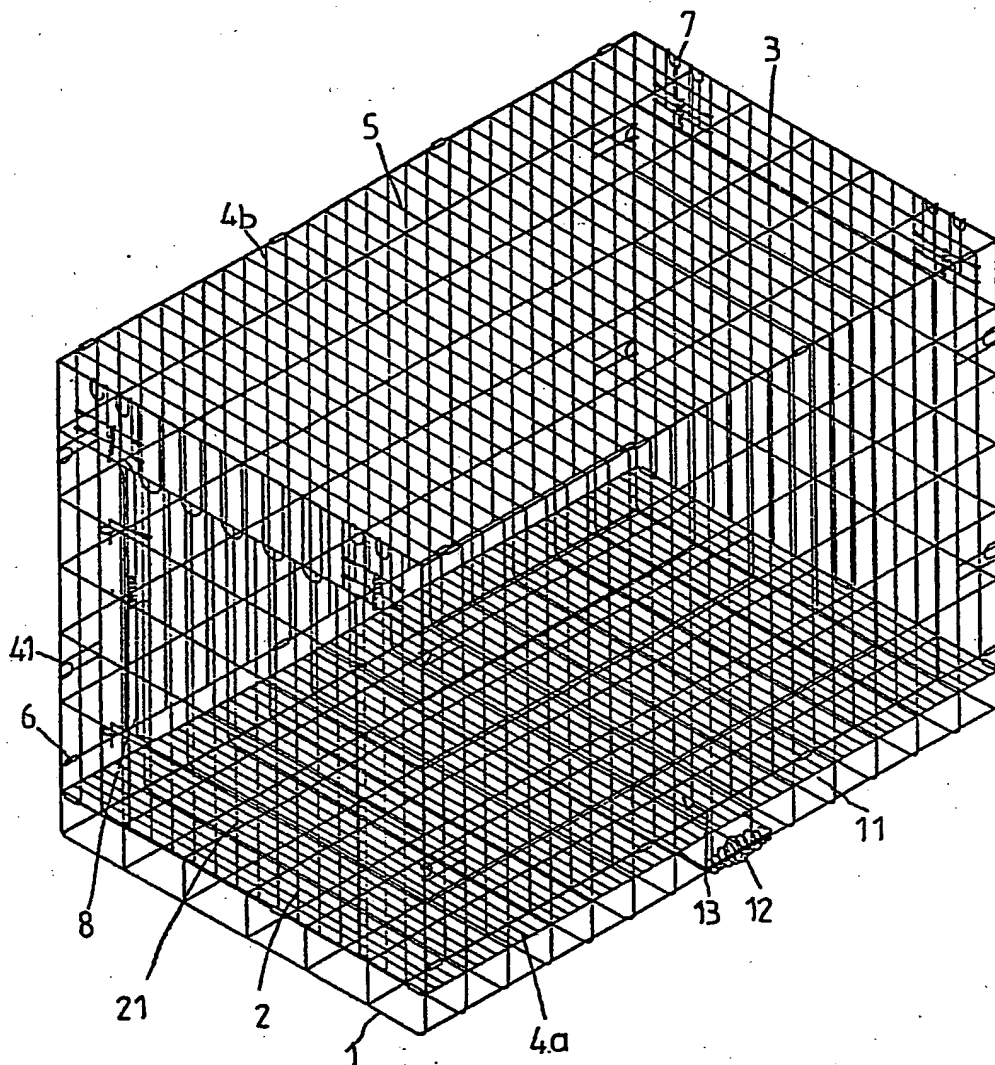


FIG. 2

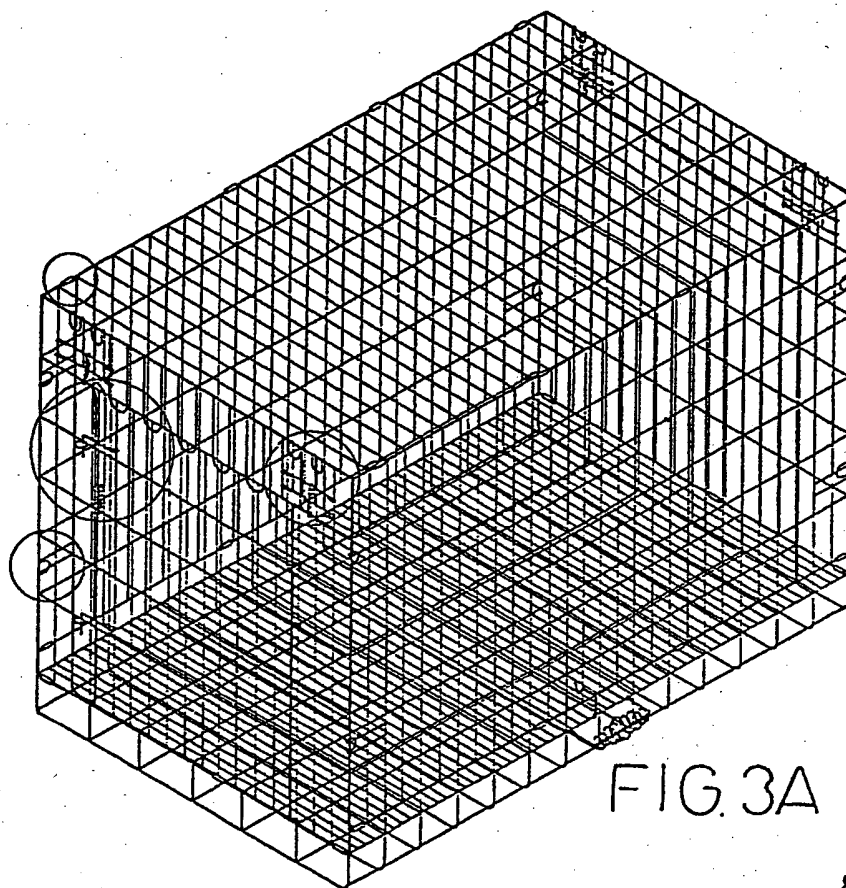


FIG. 3A

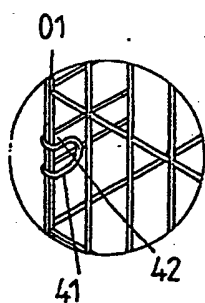


FIG. 3B

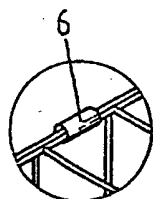


FIG. 3C

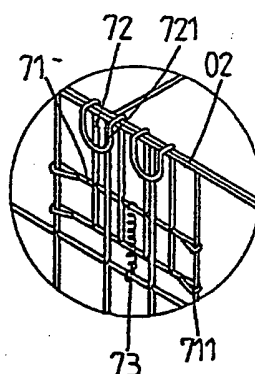


FIG. 3D

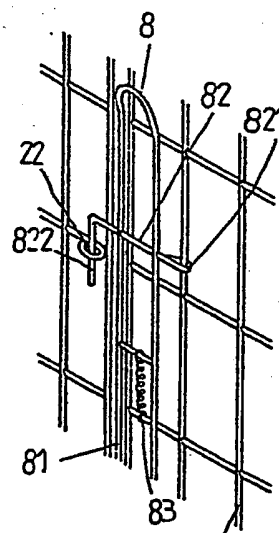
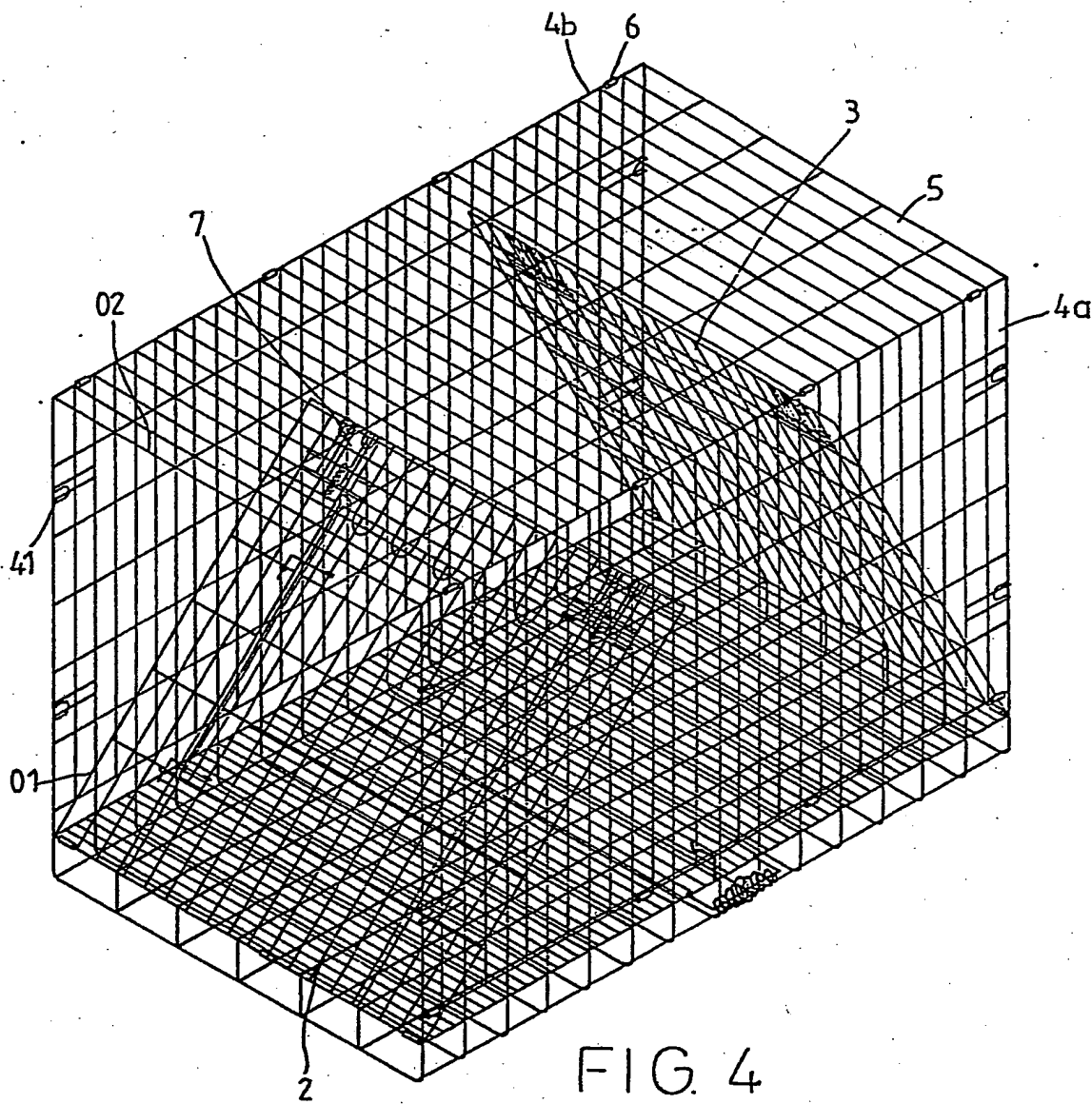


FIG. 3E



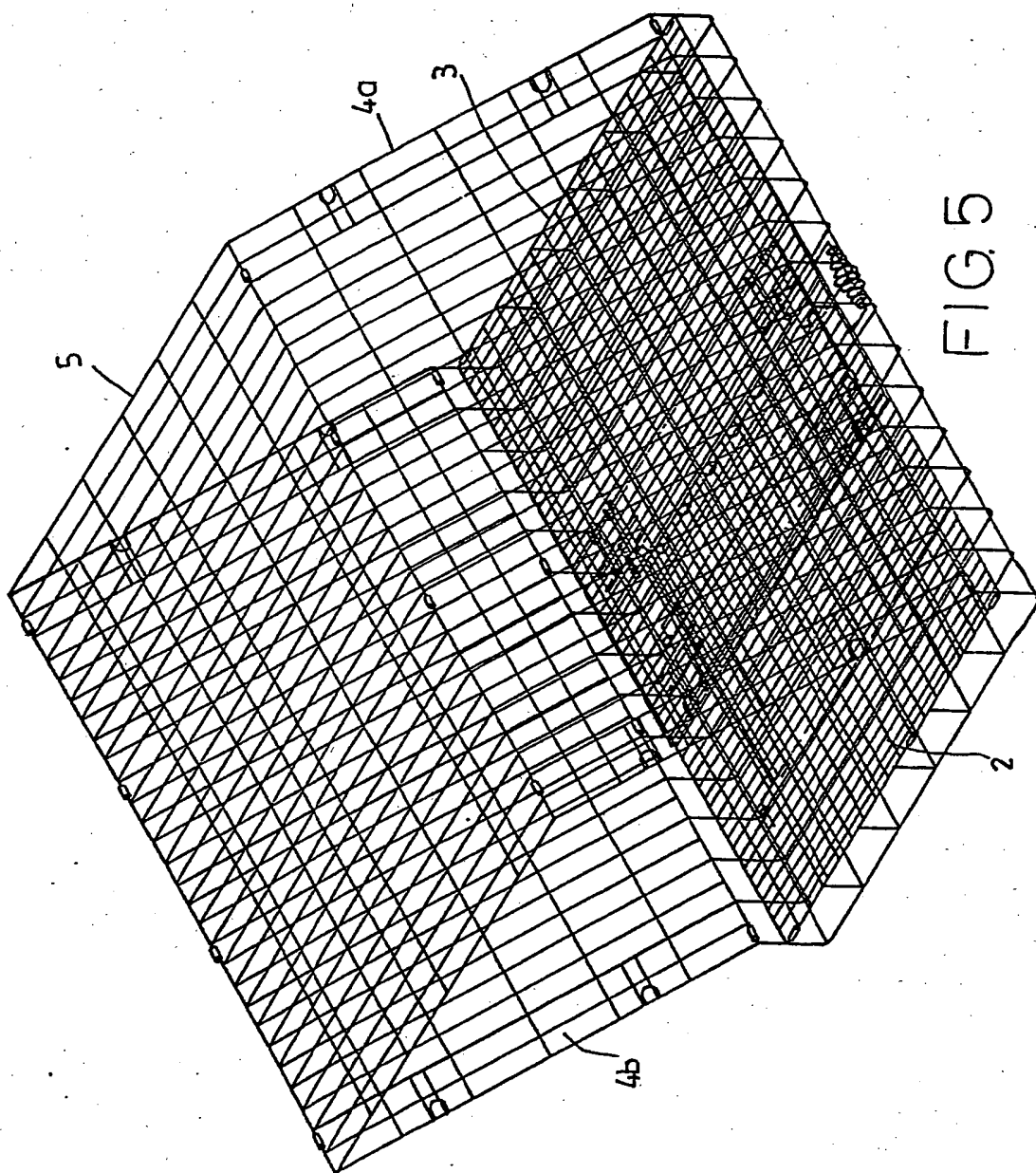


FIG. 5

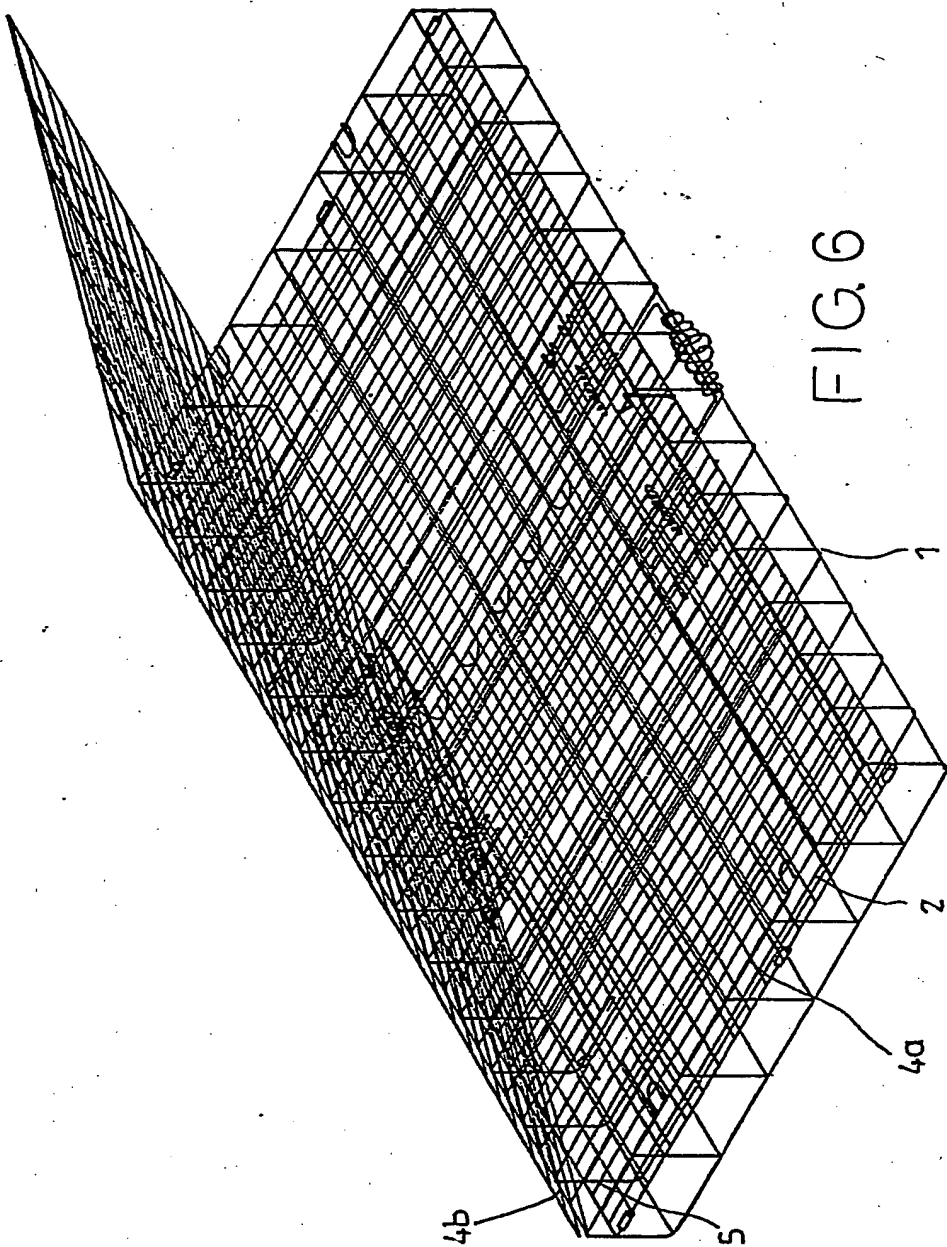


FIG. 6

FIG. 7A

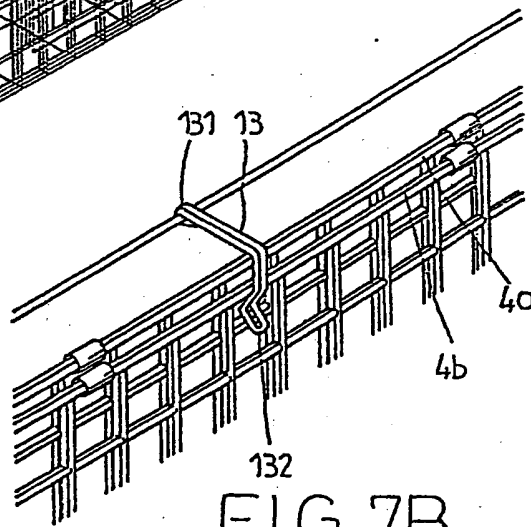
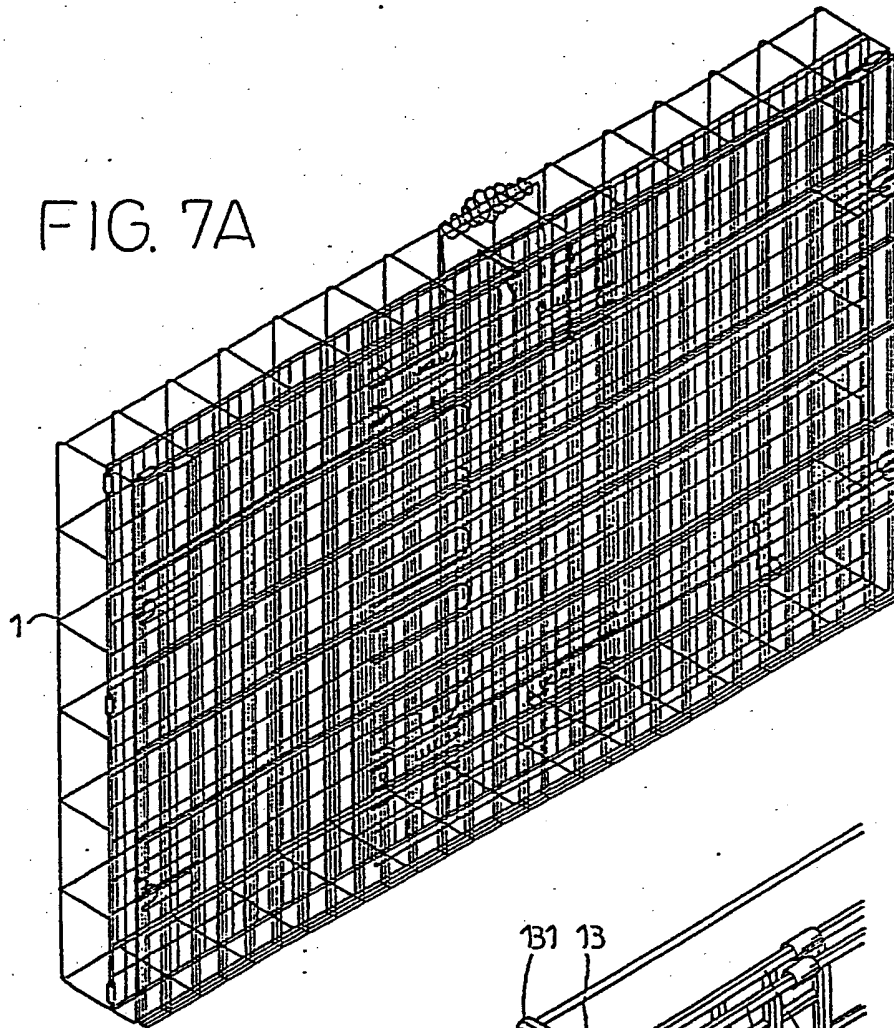


FIG. 7B



**TITLE: A PORTABLE CRATE****BACKGROUND OF THE INVENTION**

Although many dog lovers may cringe at crate, thinking of it as a cage or a cruel means of confinement, this handy piece of equipment can be put to good use for grown dogs or alike. However, the prior art has the following inconveniences. 1. not easy to clean. 2. not easy to store and to move.

In light of these problems a portable crate is provided which is easy to disassemble for cleaning, moving and storing.

## SUMMARY OF THE INVENTION

The primary object of the present invention is to provide a portable crate which is easy to assemble and disassemble.

5        It is another object of the present invention to provide a portable crate takes not much space when disassembled.

10       It is still another object of the present invention to provide a portable crate which is easy to carry when disassembled.

      It is a further object of the present invention to provide a portable crate which is easy to store when disassembled.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of the present invention;

FIG. 2 is a perspective view of the preferred embodiment;

FIG. 3A is a plan view of the present invention;

FIG. 3B, 3C, 3D and 3E are enlarged view of some parts of the preferred embodiment;

FIG. 4 is a perspective view of the present invention;

FIG. 5 is another perspective view of the present invention;

FIG. 6 is a further perspective view of the present invention;

FIG. 7A is still a further perspective view of the present invention; and

FIG. 7B is an enlarged view of a snap of the present invention.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference is now made to the drawings and in particular to FIG. 1 thereof, which is an exploded view of the present invention and which includes a bottom grid 1, a door frame 2, a back grid 3, two side grids 4a, 4b, an top grid 5, several clips 6, several twin hooks 7 and a hinge 8. The bottom grid 1 (shown as in FIG. 2) has a footgrid 11 on top of it so that excretion may drop to the floor for easy cleaning and a handle 12 and a snap 13 for easy carriage when crate is folded. The door frame 2 has a slidable door 21 as the only entrance for dog when the crate assembled. The back back 3 is in one piece when the crate assembled. The two sides grids 4a, 4b are fixed at two sides of the crate when assembled and each has some side hooks 41 (not limited in quantity) (shown as in FIG. 3B) each of which has one end fixedly installed on the side grids 4 and other end is a hook bending from outside toward inside and the hook may just fit the edge of either the door frame 2 of the back grid 3 (but not limited to these two grids) to connect the two sides grids 4a, 4b and the door frame 2, the back grid 3 together thus the door frame 2 and back grid 3 can only move inwardly and can not move outwardly. The

upper grid 5 is holding by one end of the twin hooks 7 while the other end of each of the twin hooks 7 is fixedly installed on the door frame 2 and the back grid 3 ( shown as in FIG. 3D). The twin hooks 7 each has two ( not limited in two) horizontal rods 71 in X axle direction and its two ends 711 are installed on either the door frame 2 of the back grid 3, and each further has two vertical rods 72 having one end and one point fixed to the horizontal hook 71 while the other end is made to a curved hook 721 so as to catch the edge 02 of the upper grid 5. Each of the twin hooks 7 also has a spring 73 connected to its horizontal rod 71 with one end while the other end of the spring 73 is connected to the horizontal rod 71 to provide a drawing force thus the curve hook 721 may hook the upper grid 5 tightly. The clips 6 are used to clip the girds (shown as in FIG. 3C) to connect each two pieces together. The hinge 8 ( shown as in FIG. 3E) is used to lock the slidable door 21 and is formed into a reversed U-shaped door hook 81 and has a latch rod 82 shaped like an English letter "L" with the longer end 821 fixedly connected to the slidable door 21 and other end 822 facing down for the insertion into a hole 22 integrally formed on the door frame 2. When desired to fold the crate, the first step is to pull up the twin hooks 7 to release

the upper grid 5 from locked position by the twin hooks 7 to the door frame 2 and the back grid 3 so that the door frame 2 and the back grid may be folded inwardly (shown as in FIG. 4).

5           The two side edges of the top grid 5 are still connected with the two side grids 4a & 4b by the clips 6 tightly and therefore by pushing either one side grid (take the 4a as an example), the other side grid 4b and the top grid 5 at this moment will move toward opposite  
10 position and the 4a will overlap on the two folded grids, the door frame 2 and the back grid 3 (shown as in FIG. 5). The top grid 5, because one of its edge is still connected with the top edge of the side grid 4a, will be brought down and because the other top end of the top  
15 grid 5 will connected with the other side grid 4b, the top grid 5 will be holding in standing and parallel to the side grid 4b that still standing.

Now by pushing the other side grid 4b inwardly, the top grid 5 and the side grid 4b will overlap on  
20 the other side grid 4a (shown as in FIG. 6). Lastly, using the hook end 132 of the snap 13 to hook the grids and the other end of the snap 13 is fixedly on the bottom grid 1 and this completes the folding procedure. It is only necessary to repeat the  
25 procedure in an opposite way and the crate may be open.

I CLAIM:

1. a foldable crate comprising a bottom grid, a door frame, a back grid, a top grid, two side grids, several clips, several twin hooks and a hinge, said clips being formed into an English letter "C" and clipping said bottom grid, said two side grids, said door frame, said back grid and said top grid, said twin hooks being used to connect said door frame, said back grid with said top grid, said hinge having a latch being formed like an English letter "L" and with the longer end installed on a slidable door and the shorter end inserted through a hole on said door frame to prevent door being open incidentally;. whereby when said twin hooks are released from said top grid, said door frame and said back grid may be folded inwardly to overlap and said two side grids may also be folded inwardly;
2. the foldable crate of claim 1, said two side grids having several hooks which are bent inwardly to hook the edges of said door frame and said back grid and enable said door frame and back grid to fold only toward inwardly;
3. the foldable crate of claim 1, one grid of said

two side grids has a snap and a handle at its bottom, said snap being used to hook the most top grid when folded and said handle being used to carry after folded;

- 5      4. the foldable crate of claim 1, said twin hooks being formed with its two sides fixed on said door frame or said back grid, its top end bent down to hook said top grid and having a spring with one end connected to said twin hooks and  
10      other end to said slidable door to provide said twin hooks a constant dragging down force;
- 15      5. the foldable crate of claim 1, said hinge having a latch and a spring, said latch being formed like an English letter "L" with the longer end fixed connected with said slidable door and the other end to be inserted into a hole on said door frame, said spring having one end connected to said slidable door and other end to said hinge to hold said slidable door at a closed position.